

REQUEST FOR PRODUCTION NO. 98:

All documents and tangible things in your possession, custody, or control that constitute, reflect, concern, refer, or relate to any policies, practices, or procedures that have been or may be followed by PIM, PRM, or other affiliated Putnam entities with regard to making disclosures to shareholders and/or to the public regarding any Management Fees and/or 12b-1 Fees charged to any Putnam Mutual Funds.

REQUEST FOR PRODUCTION NO. 99:

All documents and tangible things in your possession, custody, or control that constitute or reflect any of the investment programs that PIM has proposed or furnished to each of The Funds.

REQUEST FOR PRODUCTION NO. 100:

All documents and tangible things in your possession, custody, or control that concern, refer, or relate to the development or formulation of each of the investment programs that PIM has proposed or furnished to each of The Funds.

REQUEST FOR PRODUCTION NO. 101:

All documents and tangible things in your possession, custody, or control that constitute, reflect, concern, refer, or relate to each of the fee schedules for Management Fees and/or for 12b-1 Fees that PIM, PRM, or other affiliated Putnam entities have proposed or furnished to each of The Funds.

REQUEST FOR PRODUCTION NO. 102:

All documents and tangible things in your possession, custody, or control that concern, refer, or relate to the development or formulation of each of the fee schedules for Management

Fees and/or for 12b-1 Fees that PIM, PRM, or other affiliated Putnam entities have proposed or furnished to each of The Funds.

REQUEST FOR PRODUCTION NO. 103:

All documents and tangible things in your possession, custody, or control relevant to identifying, and/or establishing the amounts of, any Management Fees or 12b-1 Fees that PIM or PRM have received from any entity other than any of the Putnam Mutual Funds.

REQUEST FOR PRODUCTION NO. 104:

All documents and tangible things in your possession, custody, or control relevant to establishing on an annualized basis relative to each of The Funds for each of the years of their existence: (i) their respective portfolio holdings; (ii) the amounts of their assets under management; (iii) the amounts of their Management Fees and 12b-1 Fees paid; (iv) their applicable fee schedules; (v) the costs, expenses, and expense ratios incurred by PIM, PRM, or other affiliated Putnam entities; and (vi) the profits and profit margins realized by PIM, PRM, or other affiliated Putnam entities.

REQUEST FOR PRODUCTION NO. 105:

All documents and tangible things in your possession, custody, or control that constitute, reflect, concern, refer, or relate to constitute any charters that have been or are applicable to any Boards of Trustees, or their Boards of Trustees Committees, for any of The Funds.

REQUEST FOR PRODUCTION NO. 106:

All documents and tangible things in your possession, custody, or control that constitute, reflect, concern, refer, or relate to any policies, practices, or procedures applicable

to, and or adopted or followed by, PIM with respect to seeking and obtaining the most favorable prices and execution of trades on behalf of any of the Putnam Mutual Funds.

REQUEST FOR PRODUCTION NO. 107:

All documents and tangible things in your possession, custody, or control that constitute, reflect, concern, refer, or relate to the drafting, revising, and/or inclusion of: (i) the new passage entitled "Management fee considerations" that recently began to appear on Putnam's web site; and/or (ii) the new standard passages entitled "Trustee approval of management contracts" that recently began to appear in, *inter alia*, the semiannual reports published on behalf of some or all of the Putnam Mutual Funds.

REQUEST FOR PRODUCTION NO. 108:

All documents and tangible things in your possession, custody, or control that concern, refer, or relate to the issues of if, how, whether, or to what extent any conflicts of interests do or may exist between PIM, PRM, or other affiliated Putnam entities on the one hand, and any of the Putnam Mutual Funds and/or their shareholders on the other hand.

REQUEST FOR PRODUCTION NO. 109:

All documents and tangible things in your possession, custody, or control that concern, refer, or relate to the issues of if, how, whether, or to what extent the 12b-1 Fees charged by PRM or other affiliated Putnam entities have resulted in lower average expense ratios and/or lower flow volatility for any of the Putnam Mutual Funds.

REQUEST FOR PRODUCTION NO. 110:

All documents and tangible things in your possession, custody, or control that concern, refer, or relate to the issues of if, how, whether, or to what extent the Management Fees and/or

the 12b-1 Fees charged by PIM, PRM, or other affiliated Putnam entities have been or should be made transparent to actual or potential shareholders in any of the Putnam Mutual Funds.

REQUEST FOR PRODUCTION NO. 111:

All documents and tangible things in your possession, custody, or control that reflect, concern, or relate to any comparisons or contrasts drawn between how the profits and/or profit margins that PIM, PRM, or other affiliated Putnam entities have realized on Management Fees and/or 12b-1 Fees charged to any of the Putnam Mutual Funds have varied across fee schedule breakpoints.

REQUEST FOR PRODUCTION NO. 112:

All documents and tangible things in your possession, custody, or control that concern, refer, or relate to any investigation by any governmental, administrative, or self-regulatory body regarding the propriety or amount of any fees charged to any of the Putnam Mutual Funds including, but not limited to, all documents produced in such investigations, all transcripts of testimony, and all communications with such governmental, administrative, or self-regulatory bodies concerning such investigations.

REQUEST FOR PRODUCTION NO. 113:

All documents and tangible things in your possession, custody, or control that concern, refer, or relate to any litigation, arbitration, or mediation proceedings involving PIM and/or PRM as parties that contained any allegation concerning excessive fees charged to any of the Putnam Mutual Funds including, but not limited to, complaints, orders, judgments and settlement agreements.

REQUEST FOR PRODUCTION NO. 114:

All documents and tangible things in your possession, custody, or control that constitute organizational charts or any other documents describing the corporate structure of the Putnam family of entities, and/or the corporate relationships between PIM, PRM, PAC, Putnam LLC, and any of their other affiliates, parents, subsidiaries, and related entities.

REQUEST FOR PRODUCTION NO. 115:

All documents and tangible things in your possession, custody, or control that constitute organizational charts, telephone books, directories, and other documents describing the names, positions, and/or responsibilities of the individual employees of PIM and PRM at any and all times from January 1, 2002 to the present.

REQUEST FOR PRODUCTION NO. 116:

All documents and tangible things in your possession, custody, or control relevant to establishing the appropriate Lipper peer group for each of The Funds.

REQUEST FOR PRODUCTION NO. 117:

All documents and tangible things in your possession, custody, or control used for, or concerning, the training of any employees of Putnam entities including, but not limited to, any employee handbooks, manuals, procedure memoranda, and compliance guides.

REQUEST FOR PRODUCTION NO. 118:

All documents and tangible things in your possession, custody, or control that constitute resumes, curriculum vitae or other documents containing the professional and working history for anyone who served as an officer, Trustee, or member of any of the Investment Management Teams for any of The Funds at any and all times during the Damages Period.

REQUEST FOR PRODUCTION NO. 119:

All documents and tangible things in your possession, custody, or control that constitute organizational or charter documents for PIM and/or PRM including, but not limited to, articles or certificates of incorporation, partnership agreements, by-laws, and related filings with the relevant secretary of state.

REQUEST FOR PRODUCTION NO. 120:

All documents and tangible things in your possession, custody, or control that constitute prospectuses for any of The Funds, including all supplements or amendments thereto, or that constitute computer databases serving as an underlying source of any financial information appearing in such prospectuses.

REQUEST FOR PRODUCTION NO. 121:

All documents and tangible things in your possession, custody, or control that constitute proxy statements for any of The Funds, including all supplements or amendments thereto, or that constitute computer databases serving as an underlying source of any financial information appearing in such prospectuses.

REQUEST FOR PRODUCTION NO. 122:

All documents and tangible things in your possession, custody, or control that constitute publicly issued annual, quarterly, semi-annual, or other periodic reports, or Statements of Additional Information, for any of The Funds, including all supplements or amendments thereto, or that constitute computer databases serving as an underlying source of any financial information appearing in such reports or statements.

REQUEST FOR PRODUCTION NO. 123:

All documents and tangible things in your possession, custody, or control that constitute internal financial reports that provide further detail or breakdowns for the line items contained in any publicly available financial report for any of The Funds.

REQUEST FOR PRODUCTION NO. 124:

All documents and tangible things in your possession, custody, or control that concern, refer, or relate to the benefits and advantages, or detriments and disadvantages, to any of The Funds of using PIM as their investment advisor as opposed to using some entity other than PIM.

REQUEST FOR PRODUCTION NO. 125:

All documents and tangible things in your possession, custody, or control that constitute contracts or agreements as between any member of any Board of Trustees for any of The Funds on the one hand, and any Putnam entity on the other hand.

REQUEST FOR PRODUCTION NO. 126:

All documents and tangible things in your possession, custody, or control that concern, refer, or relate to any arrangements for any member of any of the Boards of Trustees for any of The Funds to receive brokerage services at a discount.

REQUEST FOR PRODUCTION NO. 127:

All documents and tangible things in your possession, custody, or control that constitute, contracts or agreements (other than Management Contracts) between or among PIM, PRM, and/or any of The Funds.

REQUEST FOR PRODUCTION NO. 128:

All documents and tangible things in your possession, custody, or control that list, explain, characterize, or describe the nature and/or extent of any services provided by or on behalf of PIM and/or PRM to any of the Putnam Mutual Funds.

REQUEST FOR PRODUCTION NO. 129:

All documents and tangible things in your possession, custody, or control that reflect, concern, refer, or relate to any securities clearing relationship between PIM, PRM, and any other person or entity.

REQUEST FOR PRODUCTION NO. 130:

All documents and tangible things in your possession, custody, or control that constitute, reflect, concern, refer, or relate to any internal policies, practices, or procedures purportedly followed by PIM and/or PRM when providing services under any Management Contract or pursuant to any Distribution Plan for any of the Putnam Mutual Funds.

REQUEST FOR PRODUCTION NO. 131:

All documents and tangible things in your possession, custody, or control that constitute or summarize records of the daily purchases and sales of securities made on behalf of each of The Funds at any and all times during the Damages Period.

REQUEST FOR PRODUCTION NO. 132:

All documents and tangible things in your possession, custody, or control that constitute, reflect, concern, refer, or relate to any legal, accounting, financial, compliance, or other audits (whether internal or external) relating any of The Funds including, but not limited to, any opinion letters of professionals such as attorneys or accountants, and/or any information or materials provided to any auditor relating to Management Fees and/or 12b-1 Fees.

REQUEST FOR PRODUCTION NO. 133:

All documents and tangible things in your possession, custody, or control that constitute, reflect, concern, refer, or relate to any contracts or agreements by which PIM and/or PRM subcontract with or for any other person or entity to perform any services pursuant to any Management Contract or Distribution Plan with any of The Funds.

REQUEST FOR PRODUCTION NO. 134:

All documents and tangible things in your possession, custody, or control that concern, refer, or relate to any of the Plaintiffs in the above-captioned action, including but not limited to account opening documents and account statements.

REQUEST FOR PRODUCTION NO. 135:

All documents and tangible things in your possession, custody, or control that concern, refer, or relate to identifying all securities research or analysis used in connection with any of The Funds that was provided to PIM by any person or entity other than PIM employees, including the costs to PIM of acquiring such securities research or analysis.

REQUEST FOR PRODUCTION NO. 136:

All documents and tangible things in your possession, custody, or control that constitute, reflect, concern, refer, or relate any practices, contracts, or agreements by which securities owned by or on behalf of any of The Funds are loaned to any other person or entity, including documents relevant to establishing the amount of profits realized as the result of such loans.

REQUEST FOR PRODUCTION NO. 137:

All documents and tangible things in your possession, custody, or control that constitute, reflect, concern, refer, or relate to communications to or from shareholders of any of The Funds concerning Management Fees and/or 12b-1 Fees charged to The Funds.

REQUEST FOR PRODUCTION NO. 138:

All documents and tangible things in your possession, custody, or control relevant to establishing on an annualized basis relative to each of The Funds for each of the years of their existence the profits that PIM and/or PRM have realized on the Management Fees and 12b-1 Fees that they have charged, and the per unit costs and expenses that they have incurred.

REQUEST FOR PRODUCTION NO. 139:

All documents and tangible things in your possession, custody, or control that constitute, reflect, concern, or refer or relate to marketing and/or sales plans for any of The Funds.

REQUEST FOR PRODUCTION NO. 140:

All documents and tangible things in your possession, custody, or control constituting internal financial reports or analyses pertaining to PIM, PRM, or any of The Funds including, but not limited to, budgets, forecasts, and cost accounting reports.

REQUEST FOR PRODUCTION NO. 141:

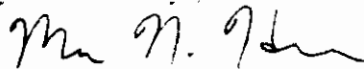
All documents and tangible things in your possession, custody, or control that reflect, concern, or relate to the issues of if, whether, how, or to what extent any of the portfolio holdings or investment strategies of any of PAC's Institutional Accounts are, or have been, modeled after any of the portfolio holdings or investment strategies of any of the Putnam Mutual Funds.

Dated: May 26, 2005

Respectfully served,

STEVEN G. WICKS;
GERALD A. KALBFLEISCH;
MICHAEL HATHAWAY; and
MYRTLE HATHAWAY

By their attorneys,



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